NOAA FISHERIES
NATIONAL MARINE FISHERIES SERVICE

Authorizations and Permits for Protected Species (APPS)

File #: 13543
Title: Sea turtle research with SEAMAP surveys

Applicant Information

Affiliation: South Carolina Department of Natural Resources
City,State,Zip: SC

Project Information

File Number:	13543
Application Status:	**Application Complete**
Project Title:	Sea turtle research with SEAMAP surveys
Project Status:	New
Previous Federal or State Permit:	
Permit Requested:	• ESA Section 10(a)(1)(A) permit (other)
Where will activities occur?	US Locations including offshore waters
Research Timeframe:	**Start:** 07/15/2008 **End:** 04/30/2014
Sampling Season/Project Duration:	Spring, Summer and Fall seasons for 5 years

Abstract: The SEAMAP-SA Coastal Survey conducts a trawl survey along the SE US coast to monitor abundance and distribution of marine species. Incidental capture of sea turtles is authorized by NMFS Southeast Regional Office based on tow time restrictions. Thus, this survey provides one of the few opportunities to acquire size data; to watch for and log existing tags; and to place tags on untagged individuals of juvenile and non-nesting adult sea turtles along a substantial portion of the southeast coast of the US. Here we request further authorization from the Office of Protected resources to handle these incidentally captured turtles in order to further the understanding of growth, distribution, and life history of these threatened and endangered animals. Data will be acquired on any sea turtle encountered: loggerheads (Caretta caretta), Kemp's Ridleys (Lepidochelys kempi), leatherbacks (Dermochelys coriacea), greens (Chelonia mydas), and even possibly hawksbills (Eretmochelys imbricata). Individuals will be measured, weighed, photographed, flipper tagged and PIT tagged before release near the site of capture. A reasonable high estimate of numbers of individuals to be handled each year is: loggerheads (45), Kemp's (15), leatherbacks (6), greens (6), and hawksbills (2, unlikely). Handling of these turtles is not anticipated to have any effect on other ESA listed species. The geographic range of this survey is coastal near-shore waters of the Atlantic from Cape Hatteras, NC down to Cape Canaveral, FL. This permit is requested for September 2008 through August 2013.

Project Description

Purpose: The objective of this portion of our study is to make best utilization of the opportunity at hand to gather biological data from turtles encountered in the process of the existing trawl survey. For a full understanding of the biology and ecology of these species it is critical that extensive data be collected on all segments of the population. As indicated earlier, the preponderance of existing turtle data is based on nesting surveys. Based on size data, individuals encountered by this survey are usually juveniles or early adults. As such, the existing survey work provides an excellent, and valuable, opportunity to obtain biological and ecological data on individuals which would never be seen on a beach. Adult females are also encountered, so it also provides an opportunity to gather data on them in other segments of their lives. The data provided by this effort allows researchers insights into different segments of the population than is commonly available to them (nesting females). This should result in a better picture of the status of the population as a whole.

Description: (General overview) Under separate request, authorization has been obtained from the NMFS Southeast Regional Office to conduct trawl tows of limited duration in nearshore waters from Cape Hatteras, NC to Cape Canaveral, FL; the purpose of which is to generate data on the abundance, biomass, and distribution (seasonally, regionally, and annually) of coastal marine species. In the course of this activity, sea turtles are encountered in the catch. These animals usually appear to be in excellent condition. So, we are here requesting authorization to handle these animals to measure, weigh, and apply tags to them in order to take advantage of the opportunity presented to gather additional data on these species. Measurements will be taken to 0.1cm with flexible tape and calipers as appropriate: CCLn-n, CCLn-t, CCW, SCLn-n, SCLn-t, and SCW. The turtle will be weighed if practical. Tags, flipper and PIT, will be applied generally as described in Chapter 6 of the draft NMFS/SEFSC Sea Turtle Research Techniques Manual, with the qualification that the front flipper placement for flipper tags has been used in the past, and will likely continue to be used on hard shelled turtles, unless direction is provided to the contrary. Turtles are typically only photographed if there appears to be something unusual to be documented. Typically, recapture rate is low; usually at a much later date. But, there is no way to predict with what frequency any given turtle may be recaptured. Given that subsequent trawl sites are almost always over a mile from the site of release, probability of immediate recapture is extremely low.

It is entirely possible that female loggerheads could be encountered on the day(s) prior to or following a nesting attempt. It is unknown if this additional stress would have a significant impact. It seems unlikely that the limited handling involved with measuring and tagging would be problematic though. It is not anticipated that these activities would impact any other "sensitive physiological/biological periods" for loggerheads. Nesting along this portion of the SE coast is unusual to quite rare for any of the other species that transit the area; certainly it does not fall within prime nesting ranges for other species. Thus impacts are not expected at all for these.

There is no target number of turtles to be processed. We simply propose to continue to gather data from turtles encounter so that the opportunity to expand our knowledge of these species is not wasted. The take table included in this document is simply our best conservatively high estimate, based on almost twenty years of data

Supplemental Information

Status of Species: Loggerhead turtle: Threatened
Kemp's ridley turtle: Endangered
Leatherback turtle: Endangered
Hawksbill: Endangered
Green turtle: Threatened /possibly endangered if an individual from the FL nesting population

Lethal Take: Not Applicable

Anticipated Effects on Animals: Sea turtles are obviously accustomed to having their weight supported in seawater. Supporting their full body weight on a boat deck is obviously stressful. But, based on observations made prior to and under permit #1405, it appears to have no damaging effects for the short duration (<1/2 hour) of processing. Taking measurements goes unnoticed by the turtle unless it is being restrained from moving about on the deck. Reaction to tagging, both flipper and PIT, is highly variable; ranging from virtually unnoticed to a noticeable "wince". These observations are substantiated by George Balazs in a 1999 paper "Factors to Consider in the Tagging of Sea Turtles". He also mentions the potential for infection when tagging and suggests very similar precautions to the ones taken during this research.
Virtually any stress inducing event has some degree of associated risk. However, the most likely source of risk to the turtle is the three puncture wounds introduced by the tagging activity (Balazs, 1999). Inadequate site preparation could increase the likelihood of infection. Also a foreign body is being introduced, which could be a source of irritation. With standard approaches of utilizing sterile PIT tags/needles, clean flipper tags, and preparing the tag site with Betadine, the risk to the individual is greatly reduced and threat to the population appears extremely low.

Measures to Minimize Effects to Listed Species: First and foremost, turtles are processed as quickly as practical in order to return them to the water as soon as possible. Any equipment which comes in contact with a turtle which appears sick in any way is disinfected before further use. Flipper tags are cleaned and stored in a clean bag prior to use and PIT tags are purchased in sterile packages and not opened until just prior to application. Handling/restraint of the turtle is kept to the least amount necessary to obtain valid measurements and to safely apply tags. This applies to both the duration of effort and force applied. Sea water is applied to the turtle and boat deck to keep temperatures down in hot conditions. The turtle would be shaded if it had to be retained for an extended period for some reason. Even for normal, short duration handling, turtles are directed to a shaded spot on the deck, if one is available. However, they are not forced to remain there, if they wish to move. If multiple turtles occur within a catch, the individuals are moved to separate locations on the deck as soon as possible in order to reduce risk of injury or transmission of disease.

Resources Needed to Accomplish Objectives:

Disposition of Tissues:

Public Availability of Product/Publications: All measurements and tag data are provided to the Archie Carr Center for Sea Turtle Research at the end of each seasonal cruise. We stipulate that any of our data may be shared with any researcher. Much of this data is also provided annually in reports to the Southeast Regional Office of NMFS. The Turtle Expert Working Group is aware of the data set and requests updates when reviewing issues. The data are provided to any other researcher or group which requests it. Also, a general summary of abundance is typically incorporated into the annual report generated on survey activities. The report on the previous year usually is available by May of the following year.

Location/Take Information

Location

Research Area: Atlantic Ocean **States:** FL,GA,NC,SC **Stream Name:** Atlantic coastal waters
Location Description: Cape Hatteras, NC to Cape Canaveral, FL in near-shore waters between the fifteen foot and thirty foot contours.

Take Information

Line Version	Species	Listing Unit/Stock	Production /Origin	Life Stage	Sex	Expected Take	Takes Per Animal	Take Action	Observe /Collect Method	Procedure	Transport Record	Begin Date	End Date

1	Turtle, loggerhead sea	Range-wide (NMFS Threatened)	Wild	Adult/Subadult/Juvenile	Male and Female	45	1	Handle/Release	Capture under other authority	Mark, flipper tag;Mark, PIT tag;Measure;Photograph;Weigh	N/A	7/15/2008 4/30/2014
	Details: April to November											
2	Turtle, green sea	Range-wide (NMFS Threatened)	Wild	Adult/Subadult/Juvenile	Male and Female	6	1	Handle/Release	Capture under other authority	Mark, flipper tag;Mark, PIT tag;Measure;Photograph;Weigh	N/A	7/15/2008 4/30/2014
	Details: April to November											
3	Turtle, Kemp's ridley sea	Range-wide (NMFS Endangered)	Wild	Adult/Subadult/Juvenile	Male and Female	15	1	Handle/Release	Capture under other authority	Mark, flipper tag;Mark, PIT tag;Measure;Photograph;Weigh	N/A	7/15/2008 4/30/2014
	Details: April to November											
4	Turtle, leatherback sea	Range-wide (NMFS Endangered)	Wild	Adult/Subadult/Juvenile	Male and Female	6	1	Handle/Release	Capture under other authority	Mark, flipper tag;Mark, PIT tag;Measure;Photograph;Weigh	N/A	7/15/2008 4/30/2014
	Details: April to November											
5	Turtle, hawksbill sea	Range-wide (NMFS Endangered)	Wild	Subadult/Adult	Male and Female	2	1	Handle/Release	Capture under other authority	Mark, flipper tag;Mark, PIT tag;Measure;Photograph;Weigh	N/A	7/15/2008 4/30/2014
	Details: April to November											

NEPA Checklist

1) Will your activities involve equipment (e.g., scientific instruments) or techniques that are new or may be considered experimental or controversial? If yes, are they likely to be adopted by other researchers in the future?

No, calipers, measuring tapes, flipper tags, PIT tags, and cameras have been in use for quite some time.

2) Do your activities involve collecting, handling, or transporting potentially infectious agents or pathogens (e.g., biological specimens such as blood)? Do your activities involve using or transporting hazardous substances (e.g., toxic chemicals)? If yes, provide a description of protocols you will use to ensure humans are not infected or injured.

No. Staff wear gloves during most turtle handling activities and all tagging related efforts. These gloves are disposed of after use. Calipers, tapes, and tagging pliers are periodically disinfected. Currently, no specimens are retained from these efforts.

3) Do any of your activities occur in or near unique geographic areas such as state or National Marine Sanctuaries, Marine Protected Areas, Parks or Wilderness Areas, Wildlife Refuges, Wild and Scenic Rivers, designated Critical Habitat for endangered or threatened species, Essential Fish Habitat, etc.? If yes, would any aspect of your activities impact the physical environment, such as by direct alteration of substrate (e.g., by bottom trawling, net setting, anchoring vessels or buoys, erecting blinds or other structures, disrupting nesting bird habitat)?

Handling, measuring, tagging, and releasing turtles should in no way pose a threat to the above mentioned areas.

4) Could your work affect sites listed in or eligible for listing in the National Register of Historic Places? Could your work cause loss or destruction of scientific, cultural, or historic resources (e.g., archeological resources)? If yes, list the sites and explain how they might be affected or why they would not be affected.

Handling, measuring, tagging, and releasing turtles should in no way pose a threat to the above mentioned areas.

5) Could any of your activities, intentionally or not, involve the transport any materials, biological or otherwise, from one area to another (e.g., transporting animals or tissues, discharging ballast water, working in sensitive remote areas)? If yes, explain the types of activities. Describe all measures you would take to prevent the possible introduction or

spread of non-indigenous or invasive species (including plants, animals, microbes, or other biological agents).

As indicated previously, no samples are retained or transported from these animals. Tools are periodically cleaned regardless of use. If there is any reason to believe that a tool is used on a sick individual, it is disinfected prior to use on any others.

Project Contacts

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Name	Role(s)
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Al Segars	Veterinarian

Attachments

This section is currently empty.

Status

Application Status: Application Complete
Date Submitted: June 19, 2008
Date Completed: August 6, 2008
FR Notice of Receipt Published: August 7, 2008 **Number:** 0648-xj40
Comment Period Closed: September 8, 2008 **Comments Received:** Yes **Comments Addressed:** Unknown
Last Date Archived: April 30, 2009

- **ESA Section 10(a)(1)(A) permit (other)**
  Current Status: Issued **Status Date:** July 15, 2008
  Section 7 Consultation: Formal Consultation

NEPA Analysis: Environmental Assessment
Date Cleared by General Counsel: April 13, 2009
Expire Date: April 30, 2014
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Modification Requests

Reports